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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/608,357 | 06/27/2003 | Padma Prabodh Varanasi | J-3866 | 7780 |

28165 7590 08/22/2007
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| EXAMINER | |
|---|---|
| CHORBAJI, MONZER R | |
| ART UNIT | PAPER NUMBER |
| 1744 | |

| MAIL DATE | DELIVERY MODE |
|---|---|
| 08/22/2007 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/608,357 | VARANASI ET AL. | |
| | Examiner | Art Unit | |
| | MONZER R. CHORBAJI | 1744 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *27 June 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 October 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

**This non-final action is in response to the RCE/Amendment received on 06/06/2007**

### *Claim Rejections - 35 USC § 102*

**1.** The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

**2.** The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

**3.** Claims 37-38 and 44-47 are rejected under 35 U.S.C. 102(e) as being unpatentable by Schramm et al (U.S.P.N. 6,793,149).

Regarding claim 37, Schramm discloses an article of manufacture (figure 1:10) in combination with a dispenser (figure 1:22 and 18) that includes a container (figure 1:18) and a volatile liquid (figure 1:20 and col.6, lines 36-37) carried by the container, the volatile liquid having an evaporation rate between about $5.0 \times 10^{-9}$ to about $10.0 \times 10^{-8}$ meters per second (col.8, lines 29-31, where meter-exponent unit division results in having units of meters per second as in the instant claims) meters per square meters

measured with about 30% of the volatile liquid remaining at room temperature (col.7, lines 27-28 where about 30% remained and col.5, lines 41-44), as measured and calculated by drop shape analysis (col.7, lines 55-57); and the container (figure 1:18) is insertable into the dispenser (see the unlabeled space where container 18 is positioned within article 10 as shown in figure 1) including a housing (figure 1:16) and a porous wick (col.4, lines 4-5 and figure 1:28) associated with the housing.

Regarding claims 38, and 44-46, Schramm discloses the following: the evaporation rate is between about $1.0 \times l0^{-8}$ and about $7.0 \times 10^{-8}$ (col.8, lines 29-31, where meter-exponent unit division results in having units of meters per second as in the instant claims) measured with about 30% of the volatile liquid remaining (col.7, lines 27-28 where about 30% remained) at room temperature (col.5, lines 41-44), the volatile liquid includes fragrance (col.6, lines 36-37), the volatile liquid includes an insecticide (col.6, lines 36-37) and the container (figure 1:18) is capable of being releasably secured (see the unlabeled space where container 18 is positioned within article 10 as shown in figure 1) to the housing (figure 1:16).

Regarding claim 47, Schramm's fragrance depending on the room temperature (col.5, lines 39-41) is capable of having at least 90% of the volatile liquid evaporate within 2 months under ambient conditions.

***Claim Rejections - 35 USC § 103***

**4.** The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

**5.** The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**6.** This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**7.** Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schramm et al (U.S.P.N. 6,793,149) as applied to claim 37 and further in view of Bretschneider et al (U.S.P.N. 6,071,937).

Schramm discloses various evaporation rate ranges for his insecticide liquids, but is silent with regard to teaching about relative evaporation rates. Bretschneider teaches that it is known in the art of preparing pesticide compositions to add oily or oleaginous solvents having relative evaporation rates greater than 35 (col.18, lines 59-

67) because such compounds provide solvent mixtures for the combination of an insecticide-fungicide mixture (col.18, lines 65-67). The disclosure as whole does not provide any criticality to the claimed range for relative evaporation rate. Then absent any evidence of criticality, manipulating Bretschneider teachings regarding the values of the relative evaporation rates is a matter of routine experimentation. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the article of manufacture in Schramm with the solvent mixtures because such compounds provide solvent mixtures for the combination of an insecticide-fungicide mixture as taught by Bretschneider (col.18, lines 65-67).

**8.** Claims 40-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schramm et al (U.S.P.N. 6,793,149) as applied to claim 37 and further in view of Schiavo et al (US 2002/0192255 A1).

Regarding claims 40-41, Schramm does not specifically teach the use of a fan. Schiavo's piezoelectric insecticidal dispenser [0097] uses a fan (figure 3B:342) in order to dispense the generated droplets [0115]. The disclosure as whole does not provide any critical structural elements to the disclosed fan. Then Schiavo's fan is capable of exhibiting a throughput of about 0.4 cubic feet per minute to about 0.45 cubic feet per minute as recited in claim 41. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the article of manufacture in Schramm with a fan in order to dispense the generated droplets as taught by Schiavo [0115].

**9.** Claims 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schramm et al (U.S.P.N. 6,793,149) as applied to claim 37 and further in view of Ito et al (U.S.P.N. 6,391,329).

Regarding claims 42-43, Schramm does not specifically teach the use of a fan. Ito's insecticide device uses a fan (figure 1:3) that is operated intermittently (col.12, lines 58-60) in order to attain an equilibrium concentration within the first 30-minute period and thereafter keeps releasing uniformaly and stably over 360 hours (col.13, lines 6-10). The disclosure as whole does not provide any critical structural elements to the disclosed fan. Then Ito's fan is capable of operating the air stream in an on and off ratio of about 1 minute to 3 minutes. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the article of manufacture in Schramm with an intermittent operating fan in order to attain an equilibrium concentration within the first 30-minute period and thereafter keeps releasing uniformaly and stably over 360 hours as taught by Ito (col.13, lines 6-10).

**10.** Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schramm et al (U.S.P.N. 6,793,149) as applied to claim 37 and further in view of He et al (US 2002/0136886 A1).

Schramm discloses supplying liquid to the underside of the vibrating orifice plate using a wick (col.4, lines 2-5), but does not specifically disclose range values for its mean pore size. He dispenses fragrance material [0011] using polymeric wicks [0009] having average pore size from about 2 to about 70 microns [0057) because in such a pore range polymeric wicks showed no substantial fluid leakage upon inversion [0055].

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the article of manufacture in Schramm with a wick having an average pore size from about 2 to about 70 microns in order to have a polymeric wick that shows no substantial fluid leakage upon inversion as taught by He [0055].

**11.** Claims 13-14 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schramm et al (U.S.P.N. 6,793,149)

Regarding claim 13, Schramm discloses the following: a housing (figure 1:16) and a porous wick (col.4, lines 4-5 and figure 1:28 where the structure wick includes the limitation porous) associated with the housing, a preselected volume of volatile liquid enclosed within the reservoir (one of ordinary skill in the art would recognize that Schramm's container (20) holds a maximum amount, i.e., preselected volume, of the volatile liquid), the volatile liquid having an evaporation rate between about $5.0 \times 10^{-9}$ to about $10.0 \times 10^{-8}$ meters per second (col.8, lines 29-31, where meter-exponent unit division results in having units of meters per second as in the instant claims) meters per square meters measured with about 30% of the volatile liquid remaining at room temperature (col.7, lines 27-28 where about 30% remained and col.5, lines 41-44), as measured and calculated by drop shape analysis (col.7, lines 55-57), and the wick is in fluid communication with the volatile liquid and the surrounding environment (figure 1:28 and col.4, lines 2-5). As to the limitation of having at least 90% of the volatile liquid evaporate within 2 months under ambient conditions when the wick is exposed to the surrounding environment, one of ordinary skill in the art, based on Schramm's teaching

that the rate of evaporation depends on the room temperature (col.5, lines 39-41) would recognize that as the temperature increases, so does the rate of evaporation or vice versa. For example, if evaporation occurs in a room having ambient temperature of 10 degrees Celsius, then it would take 2 or more months for at least 90% of the fragrance to evaporate versus a room having ambient temperature of 35 degrees Celsius where at least 90% of the fragrance would evaporate in less than 2 months.

Regarding claims 14 and 20-22, Schramm discloses the following: the evaporation rate is between about $1.0 \times l0^{-8}$ and about $7.0 \times 10^{-8}$ (col.8, lines 29-31, where meter-exponent unit division results in having units of meters per second as in the instant claims) measured with about 30% of the volatile liquid remaining (col.7, lines 27-28 where about 30% remained) at room temperature (col.5, lines 41-44), the volatile liquid includes fragrance (col.6, lines 36-37), the volatile liquid includes an insecticide (col.6, lines 36-37) and the container (figure 1:18) is capable of being releasably secured (see the unlabeled space where container 18 is positioned within article 10 as shown in figure 1) to the housing (figure 1:16).

**12.** Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schramm et al (U.S.P.N. 6,793,149) as applied to claim 13 and further in view of Bretschneider et al (U.S.P.N. 6,071,937).

Schramm discloses various evaporation rate ranges for his insecticide liquids, but is silent with regard to teaching about relative evaporation rates. Bretschneider teaches that it is known in the art of preparing pesticide compositions to add oily or oleaginous solvents having relative evaporation rates greater than 35 (col.18, lines 59-

67) because such compounds provide solvent mixtures for the combination of an insecticide-fungicide mixture (col.18, lines 65-67). The disclosure as whole does not provide any criticality to the claimed range for relative evaporation rate. Then absent any evidence of criticality, manipulating Bretschneider teachings regarding the values of the relative evaporation rates is a matter of routine experimentation. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the article of manufacture in Schramm with the solvent mixtures because such compounds provide solvent mixtures for the combination of an insecticide-fungicide mixture as taught by Bretschneider (col.18, lines 65-67).

**13.** Claims 16-17 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schramm et al (U.S.P.N. 6,793,149) as applied to claim 13 and further in view of Schiavo et al (US 2002/0192255 A1).

Regarding claims 16-17 and 23, Schramm does not specifically teach the use of a fan and is silent regarding the volume of the volatile liquid added to container 18 in figure 1. Schiavo's piezoelectric insecticidal dispenser [0097] uses a fan (figure 3B:342) in order to dispense the generated droplets [0115] and further teaches using 10 ml of the volatile insecticidal liquid [0121-0122]. The disclosure as whole does not provide any critical structural elements to the disclosed fan. Then Schiavo's fan is capable of exhibiting a throughput of about 0.4 cubic feet per minute to about 0.45 cubic feet per minute as recited in claim 41. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the article of manufacture in

Schramm with a fan in order to dispense the generated droplets as taught by Schiavo [0115].

**14.** Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schramm et al (U.S.P.N. 6,793,149) as applied to claim 13 and further in view of Ito et al (U.S.P.N. 6,391,329).

Regarding claims 18-19, Schramm does not specifically teach the use of a fan. Ito's insecticide device uses a fan (figure 1:3) that is operated intermittently (col.12, lines 58-60) in order to attain an equilibrium concentration within the first 30-minute period and thereafter keeps releasing uniformaly and stably over 360 hours (col.13, lines 6-10). The disclosure as whole does not provide any critical structural elements to the disclosed fan. Then Ito's fan is capable of operating the air stream in an on and off ratio of about 1 minute to 3 minutes. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the article of manufacture in Schramm with an intermittent operating fan in order to attain an equilibrium concentration within the first 30-minute period and thereafter keeps releasing uniformaly and stably over 360 hours as taught by Ito (col.13, lines 6-10).

**15.** Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schramm et al (U.S.P.N. 6,793,149) as applied to claim 13 and further in view of He et al (US 2002/0136886 A1).

Schramm discloses supplying liquid to the underside of the vibrating orifice plate using a wick (col.4, lines 2-5), but does not specifically disclose range values for its mean pore size. He dispenses fragrance material [0011] using polymeric wicks [0009]

having average pore size from about 2 to about 70 microns [0057) because in such a pore range polymeric wicks showed no substantial fluid leakage upon inversion [0055]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the article of manufacture in Schramm with a wick having an average pore size from about 2 to about 70 microns in order to have a polymeric wick that shows no substantial fluid leakage upon inversion as taught by He [0055].

**16.** Claims 1-2, 4 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schramm et al (U.S.P.N. 6,793,149) in view of Schiavo et al (US 2002/0192255 A1).

Regarding claim 1, Schramm discloses an article of manufacture (figure 1:10) that includes the following: a housing (figure 1:16), the volatile liquid carried within an enclosed reservoir (figure 1:18) having an evaporation rate between about $5.0 \times 10^{-9}$ to about $10.0 \times 10^{-8}$ meters per second (col.8, lines 29-31, where meter-exponent unit division results in having units of meters per second as in the instant claims) meters per square meters measured with about 30% of the volatile liquid remaining at room temperature (col.7, lines 27-28 where about 30% remained and col.5, lines 41-44), as measured and calculated by drop shape analysis (col.7, lines 55-57) and a wick (col.4, lines 4-5 and figure 1:28) extending between the volatile material and the surroundings. As to the limitation of having at least 90% of the volatile liquid evaporate within one and two months under ambient conditions when the wick is exposed to the surrounding environment, one of ordinary skill in the art, based on Schramm's teaching that the rate

of evaporation depends on the room temperature (col.5, lines 39-41) would recognize that as the temperature increases, so does the rate of evaporation or vice versa. For example, if evaporation occurs in a room having ambient temperature of 10 degrees Celsius, then it would take 2 or more months for at least 90% of the fragrance to evaporate versus a room having ambient temperature of 35 degrees Celsius where at least 90% of the fragrance would evaporate in less than 2 months. Schramm is silent to using a fan and to disclosing the amount of the volatile material. Schiavo's piezoelectric insecticidal dispenser [0097] uses a fan (figure 3B:342) in order to dispense the generated droplets [0115] and further teaches using 10 ml of the volatile insecticidal liquid [0121-0122] in order for the insecticide to last through 45 days of use [0122]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the article of manufacture in Schramm with a fan in order to dispense the generated droplets as taught by Schiavo [0115] and to further provide the article of manufacture in Schramm with a 10 ml of the volatile insecticidal liquid in order for the insecticide to last through 45 days of use as taught by Schiavo [0122].

Regarding claims 2 and 7-9, Schramm discloses the following: the evaporation rate is between about $1.0 \times l0^{-8}$ and about $7.0 \times 10^{-8}$ (col.8, lines 29-31, where meter-exponent unit division results in having units of meters per second as in the instant claims) measured with about 30% of the volatile liquid remaining (col.7, lines 27-28 where about 30% remained) at room temperature (col.5, lines 41-44), the volatile liquid includes fragrance (col.6, lines 36-37), the volatile liquid includes an insecticide (col.6, lines 36-37) and the container (figure 1:18) is capable of being releasably secured (see

the unlabeled space where container 18 is positioned within article 10 as shown in figure 1) to the housing (figure 1:16).

Regarding claim 4, Schramm does not specifically teach the use of a fan. Schiavo's piezoelectric insecticidal dispenser [0097] uses a fan (figure 3B:342) in order to dispense the generated droplets [0115]. The disclosure as whole does not provide any critical structural elements to the disclosed fan. Then Schiavo's fan is capable of exhibiting a throughput of about 0.4 cubic feet per minute to about 0.45 cubic feet per minute as recited in claim 41. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the article of manufacture in Schramm with a fan in order to dispense the generated droplets as taught by Schiavo [0115].

Regarding claim 10, Schramm's fragrance depending on the room temperature (col.5, lines 39-41) is capable of having at least 90% of the volatile liquid evaporate in about 2 months under ambient conditions.

**17.** Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schramm et al (U.S.P.N. 6,793,149) in view of Schiavo et al (US 2002/0192255 A1) as applied to claim 1 and further in view of Bretschneider et al (U.S.P.N. 6,071,937).

Schramm discloses various evaporation rate ranges for his insecticide liquids, but is silent with regard to teaching about relative evaporation rates. Schiavo does not specifically teach relative evaporation rates. Bretschneider teaches that it is known in the art of preparing pesticide compositions to add oily or oleaginous solvents having relative evaporation rates greater than 35 (col.18, lines 59-67) because such

compounds provide solvent mixtures for the combination of an insecticide-fungicide mixture (col.18, lines 65-67). The disclosure as whole does not provide any criticality to the claimed range for relative evaporation rate. Then absent any evidence of criticality, manipulating Bretschneider teachings regarding the values of the relative evaporation rates is a matter of routine experimentation. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the article of manufacture in Schramm with the solvent mixtures because such compounds provide solvent mixtures for the combination of an insecticide-fungicide mixture as taught by Bretschneider (col.18, lines 65-67).

**18.** Claims 5-6 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schramm et al (U.S.P.N. 6,793,149) in view of Schiavo et al (US 2002/0192255 A1) as applied to claim 1 and further in view of Ito et al (U.S.P.N. 6,391,329).

Regarding claims 5-6, Schramm and Schiavo do not specifically teach the use of a fan. Ito's insecticide device uses a fan (figure 1:3) that is operated intermittently (col.12, lines 58-60) in order to attain an equilibrium concentration within the first 30-minute period and thereafter keeps releasing uniformaly and stably over 360 hours (col.13, lines 6-10). The disclosure as whole does not provide any critical structural elements to the disclosed fan. Then Ito's fan is capable of operating the air stream in an on and off ratio of about 1 minute to 3 minutes. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the article of manufacture in Schramm with an intermittent operating fan in order to attain an

equilibrium concentration within the first 30-minute period and thereafter keeps releasing uniformaly and stably over 360 hours as taught by Ito (col.13, lines 6-10).

**19.** Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schramm et al (U.S.P.N. 6,793,149), Schiavo et al (US 2002/0192255 A1), Ito et al (U.S.P.N. 6,391,329) as applied to claim 11 and further in view of He et al (US 2002/0136886 A1).

Schramm discloses supplying liquid to the underside of the vibrating orifice plate using a wick (col.4, lines 2-5), but does not specifically disclose range values for its mean pore size. Also, Schiavo and Ito are silent about disclosing range values for the mean pore size of wicks. He dispenses fragrance material [0011] using polymeric wicks [0009] having average pore size from about 2 to about 70 microns [0057) because in such a pore range polymeric wicks showed no substantial fluid leakage upon inversion [0055]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the article of manufacture in Schramm with a wick having an average pore size from about 2 to about 70 microns in order to have a polymeric wick that shows no substantial fluid leakage upon inversion as taught by He [0055].

**20.** Claims 25-26, 28, 31-33 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schramm et al (U.S.P.N. 6,793,149) in view of Pedrotti et al (U.S.P.N. 6,931,202).

Regarding claim 25, Schramm discloses an article of manufacture (figure 1:10) in combination with a dispenser (figure 1:22 and 18) that includes the following: a

container having an aperture (container 18 in figure 1 has unlabeled aperture through which liquid delivery system 28 extends), a preselected volume of volatile liquid enclosed within the reservoir (one of ordinary skill in the art would recognize that Schramm's container (20) holds a maximum amount, i.e., preselected volume, of the volatile liquid), the volatile liquid carried within an enclosed reservoir (figure 1:18) having an evaporation rate between about $5.0 \times 10^{-9}$ to about $10.0 \times 10^{-8}$ meters per second (col.8, lines 29-31, where meter-exponent unit division results in having units of meters per second as in the instant claims) meters per square meters measured with about 30% of the volatile liquid remaining at room temperature (col.7, lines 27-28 where about 30% remained and col.5, lines 41-44), as measured and calculated by drop shape analysis (col.7, lines 55-57), a wick (col.4, lines 4-5 and figure 1:28) disposed in the aperture that is in fluid communication with the volatile material and the surrounding environment (figure 1:28) and the container (figure 1:18) is insertable into the dispenser (see the unlabeled space where container 18 is positioned within article 10 as shown in figure 1) including a housing (figure 1:16). As to the limitation of having at least 90% of the volatile liquid evaporate within two months under ambient conditions when the wick is exposed to the surrounding environment, one of ordinary skill in the art, based on Schramm's teaching that the rate of evaporation depends on the room temperature (col.5, lines 39-41) would recognize that as the temperature increases, so does the rate of evaporation or vice versa. For example, if evaporation occurs in a room having ambient temperature of 10 degrees Celsius, then it would take 2 or more months for at least 90% of the fragrance to evaporate versus a room having ambient temperature of

35 degrees Celsius where at least 90% of the fragrance would evaporate in less than 2 months. Schramm is silent to using a fan and the material that make up the wick. Pedrotti insecticidal evaporator (figure 6:100) includes a fan (figure 6:260) that creates an air stream in order to entrain the evaporated liquid formulation and assist in the dispersion of the chemical active into the surrounding environment (col.4, lines 50-53) and a wick (figure 6:190) constructed of ultra high molecular weight high density polyethylene (col.4, lines 1-3) in order to provide a wick with a cap that encases its upper portion except for an open area near its tip (col.3, lines 64-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the article of manufacture in Schramm with a fan in order to entrain the evaporated liquid formulation and assist in the dispersion of the chemical active into the surrounding environment as taught by Pedrotti (col.4, lines 50-53) and to further provide the article of manufacture in Schramm with a wick constructed of ultra high molecular weight high density polyethylene in order to provide a wick with a cap that encases its upper portion except for an open area near its tip as taught by Pedrotti (col.3, lines 64-67).

Regarding claims 26 and 31-33, Schramm discloses the following: the evaporation rate is between about $1.0 \times 10^{-8}$ and about $7.0 \times 10^{-8}$ (col.8, lines 29-31, where meter-exponent unit division results in having units of meters per second as in the instant claims) measured with about 30% of the volatile liquid remaining (col.7, lines 27-28 where about 30% remained) at room temperature (col.5, lines 41-44), the volatile liquid includes fragrance (col.6, lines 36-37), the volatile liquid includes an insecticide

(col.6, lines 36-37), the container (figure 1:18) is capable of being releasably secured (see the unlabeled space where container 18 is positioned within article 10 as shown in figure 1) to the housing (figure 1:16).

Regarding claim 28, Schramm does not specifically teach the use of a fan. Pedrotti insecticidal evaporator (figure 6:100) includes a fan (figure 6:260) that creates an air stream in order to entrain the evaporated liquid formulation and assist in the dispersion of the chemical active into the surrounding environment (col.4, lines 50-53) The disclosure as whole does not provide any critical structural elements to the disclosed fan. Then Pedrotti's fan is capable of exhibiting a throughput of about 0.4 cubic feet per minute to about 0.45 cubic feet per minute as recited in claim 28. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the article of manufacture in Schramm with a fan in order to entrain the evaporated liquid formulation and assist in the dispersion of the chemical active into the surrounding environment as taught by Pedrotti (col.4, lines 50-53).

Regarding claim 35, Schramm is silent to using a fan. Pedrotti insecticidal evaporator (figure 6:100) includes a fan (figure 6:260) that creates an air stream in order to entrain the evaporated liquid formulation and assist in the dispersion of the chemical active into the surrounding environment (col.4, lines 50-53) and a wick (figure 6:190) is in alignment with fan in order to provide a wick with a cap that encases its upper portion except for an open area near its tip (col.3, lines 64-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the article of manufacture in Schramm with a fan in order to entrain the evaporated

liquid formulation and assist in the dispersion of the chemical active into the surrounding environment as taught by Pedrotti (col.4, lines 50-53) and to further provide the article of manufacture in Schramm with a wick in order to provide a wick with a cap that encases its upper portion except for an open area near its tip as taught by Pedrotti (col.3, lines 64-67).

**21.** Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schramm et al (U.S.P.N. 6,793,149) in view of Pedrotti et al (U.S.P.N. 6,931,202) as applied to claim 25 and further in view of Bretschneider et al (U.S.P.N. 6,071,937).

Schramm and Pedrotti disclose various evaporation rate ranges for their insecticide liquids, but are silent with regard to teaching about relative evaporation rates. Bretschneider teaches that it is known in the art of preparing pesticide compositions to add oily or oleaginous solvents having relative evaporation rates greater than 35 (col.18, lines 59-67) because such compounds provide solvent mixtures for the combination of an insecticide-fungicide mixture (col.18, lines 65-67). The disclosure as whole does not provide any criticality to the claimed range for relative evaporation rate. Then absent any evidence of criticality, manipulating Bretschneider teachings regarding the values of the relative evaporation rates is a matter of routine experimentation. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the article of manufacture in Schramm with the solvent mixtures because such compounds provide solvent mixtures for the combination of an insecticide-fungicide mixture as taught by Bretschneider (col.18, lines 65-67).

**22.** Claims 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schramm et al (U.S.P.N. 6,793,149) in view of Pedrotti et al (U.S.P.N. 6,931,202) as applied to claim 25 and further in view of Ito et al (U.S.P.N. 6,391,329).

Regarding claims 29-30, Schramm does not specifically teach the use of a fan where as Pedrotti uses a fan, but does not specifically teach that it functions intermittently. Ito's insecticide device uses a fan (figure 1:3) that is operated intermittently (col.12, lines 58-60) in order to attain an equilibrium concentration within the first 30-minute period and thereafter keeps releasing uniformaly and stably over 360 hours (col.13, lines 6-10). The disclosure as whole does not provide any critical structural elements to the disclosed fan. Then Ito's fan is capable of operating the air stream in an on and off ratio of about 1 minute to 3 minutes. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the article of manufacture in Schramm with an intermittent operating fan in order to attain an equilibrium concentration within the first 30-minute period and thereafter keeps

**23.** Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schramm et al (U.S.P.N. 6,793,149) in view of Pedrotti et al (U.S.P.N. 6,931,202) as applied to claim 25 and further in view of Schiavo et al (US 2002/0192255 A1).

Schramm and Pedrotti do not specifically teach the amount of volatile liquid placed in their enclosed containers. Schiavo teaches using 10 ml of the volatile insecticidal liquid [0121-0122] in order for the insecticide to last through 45 days of use [0122]. Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to provide the article of manufacture in Schramm with 10 ml of the volatile insecticidal liquid in order for the insecticide to last through 45 days of use as taught by Schiavo [0122].

**24.** Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schramm et al (U.S.P.N. 6,793,149) in view of Pedrotti et al (U.S.P.N. 6,931,202) as applied to claim 25 and further in view of He et al (US 2002/0136886 A1).

Schramm discloses supplying liquid to the underside of the vibrating orifice plate using a wick (col.4, lines 2-5), but does not specifically disclose range values for its mean pore size. Also, Schiavo and Pedrotti are silent about disclosing range values for the mean pore size of wicks. He dispenses fragrance material [0011] using polymeric wicks [0009] having average pore size from about 2 to about 70 microns [0057) because in such a pore range polymeric wicks showed no substantial fluid leakage upon inversion [0055]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the article of manufacture in Schramm with a wick having an average pore size from about 2 to about 70 microns in order to have a polymeric wick that shows no substantial fluid leakage upon inversion as taught by He [0055].

***Response to Arguments***

**25.** Applicant's arguments with respect to claims 1-48 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

**26.** Any inquiry concerning this communication or earlier communications from the examiner should be directed to MONZER R. CHORBAJI whose telephone number is (571) 272-1271. The examiner can normally be reached on M-F 9:00-5:30.

**27.** If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, GLADYS J. CORCORAN can be reached on (571) 272-1214. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

**28.** Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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